Washington State
Institute for
Public Policy

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OUTCOME EVALUATION OF WASHINGTON STATE'S RESEARCH-BASED PROGRAMS FOR JUVENILE OFFENDERS

SECTION I: INTRODUCTION

In 1997, the Washington State Legislature passed the Community Juvenile Accountability Act (CJAA).[1] The primary goal of the CJAA is to reduce juvenile crime, cost effectively, by establishing "research-based" programs in the state's juvenile courts.[2] The basic idea is straightforward: taxpayers are better off if their dollars fund programs that have been proven to be effective in achieving key policy outcomes, in this case reduced re-offending.

Washington's effort is part of a nationwide trend to use research evidence to inform policy and program choices. The University of Colorado's Center for the Study and Prevention of Violence refers to research-based programs as "Blueprint Programs" when they meet strict scientific standards and have sufficient documentation to permit replication.[3]

The CJAA represents the nation's first statewide experiment of research-based programs for juvenile justice. Because the selected treatment programs had already been researched and found to be successful elsewhere in the United States, usually as small scale pilot projects, the question here was whether they work statewide in a "real world" setting. This report indicates that the answer to this question is yes—when the programs are competently delivered.

The specific research-based programs implemented in Washington were selected after the Washington State Institute for Public Policy (Institute) reviewed the national research literature.[4]

[1] RCW 13.40.500 - 540
[2] RCW 13.40.510
[3] <www.colorado.edu/cspv>
[4] S. Aos, P. Phipps, R. Barnoski, and R. Lieb, *The Comparative Costs and Benefits of Programs to Reduce Crime, Version 4.0* (Olympia: Washington State Institute for Public Policy, May 2001).

SUMMARY

In 1997, the Washington State Legislature passed the Community Juvenile Accountability Act (CJAA). The primary goal of the CJAA is to reduce juvenile crime, cost effectively, by establishing "research-based" programs in the state's juvenile courts. The basic idea is straightforward: taxpayers are better off if their dollars fund programs that have been proven to be effective in achieving key policy outcomes, in this case reduced re-offending.

The CJAA funded the nation's first statewide experiment concerning research-based programs for juvenile justice. Because selected treatment programs had already been researched elsewhere in the United States, usually as small scale pilot projects, the question here was whether they work when applied statewide in a "real world" setting. This report indicates that the answer to this question is yes— when the programs are competently delivered.

The basic findings are these:

1. When Functional Family Therapy (FFT) is delivered competently, the program reduces felony recidivism by 38 percent. The cost-benefit analyses find that FFT generates $2.77 in savings (avoided crime costs) for each taxpayer dollar spent on the program, regardless of therapist competence. For competent FFT therapists, the savings are greater—$10.69 in benefits for each taxpayer dollar spent.
2. When competently delivered, Aggression Replacement Training (ART) has positive outcomes with estimated reductions in 18-month felony recidivism of 24 percent and a benefit to cost ratio of $11.66.
3. The Coordination of Services program achieved a decrease in 12-month felony recidivism, and the estimated benefit to cost ratio is $7.89.
4. Because of problems implementing the Institute's evaluation design, no findings are associated with Multi-Systemic Therapy (MST). If the courts and the state wish to continue funding MST, the Institute recommends re-evaluating the program.

These findings affirm the merit of the legislature's investment in research-based programs for juvenile offenders. The next step is to implement the CJAA quality assurance standards so taxpayers can fully benefit from these programs.

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The following four CJAA programs were selected by Washington's 33 juvenile courts:

- *Functional Family Therapy (FFT)* was selected by 14 juvenile courts: Benton/Franklin, Grant, Grays Harbor, King, Kitsap, Klickitat, Lincoln, Pierce, Skagit, Snohomish, Spokane, Thurston, Whatcom, and Yakima;
- *Aggression Replacement Training (ART)* was selected by 26 courts: Adams, Asotin, Benton/ Franklin, Chelan, Clallam, Clark, Cowlitz, Grant, Island, Jefferson, King, Kitsap, Kittitas, Lewis, Mason, Okanogan, Pacific/Wahkiakum, Pierce, Skamania, Snohomish, Spokane, Stevens, Thurston, Walla Walla, Whitman, and Yakima;
- *Coordination of Services (COS)* was selected by Snohomish Juvenile Court; and
- *Multi-Systemic Therapy (MST)* was selected by King, Kitsap, and Pierce Juvenile Courts.[5]

The Legislature directed the state's Juvenile Rehabilitation Administration (JRA) to oversee funding and quality adherence for the CJAA. In 1997, the Legislature also directed the Institute to determine whether the funded programs reduced recidivism.[6] The juvenile courts and JRA formed the CJAA Committee for purposes of coordination and decision-making.

The evaluation relied on the following schedule:[7]

July 1998	State funding begins.
January 1999	CJAA program implementation.
July 1999	Program evaluation begins.
September 2000	Study samples include sufficient numbers of youth.
September 2002	Preliminary 12-month recidivism measurement period ends.
March 2003	Final 18-month recidivism measurement period ends.[8]
December 2003	Final report.

The CJAA specified that local juvenile courts target both diverted and adjudicated juvenile offenders for the programs and use a risk assessment to identify appropriate youth. The Institute worked with the Washington State Association of Juvenile Court Administrators to develop the Washington State Juvenile Court Assessment (WSJCA).[9] This comprehensive assessment measures risk and protective factors identified by research as associated with juvenile criminality. The WSJCA classifies youth as low-, moderate-, or high-risk for re-offense. The WSJCA also produces a profile of risk measures for these domains: school, free-time, peers, family, mental health, aggression, anti-social attitudes, or social skills. The CJAA Committee determined that only moderate- to high-risk youth with a specific risk profile are considered for ART, FFT, and MST, while COS is for low-risk youth. Using the assessment to screen for program eligibility created a pool of youth across the courts with similar risk and protective factors who could potentially benefit from the program.

In 2002, two preliminary Institute reports[10] found that FFT and ART appeared to reduce recidivism during a 12-month follow-up period. This final report contains 18-month follow-up data and supports the preliminary findings. The appendix to this report includes technical results and computations.[11]

Overview of Findings

Exhibit 1 summarizes results for the four research-based programs.

- When FFT is delivered competently, the program reduces felony recidivism by 38 percent. The cost-benefit analyses find that FFT generates $2.77 in savings (avoided crime costs) for each taxpayer dollar spent on the program, regardless of therapist competence. For competent FFT therapists, the savings are greater—$10.69 in benefits for each taxpayer dollar spent.
- When competently delivered, ART has positive outcomes with estimated reductions in 18-month felony recidivism of 24 percent and a positive benefit to cost ratio of $11.66.

[5] These counties use the Juvenile Accountability Incentive Block Grant (JAIBG) funds, not CJAA funds, for MST.
[6] RCW 13.40.500 – 540, Community Juvenile Accountability Act.
[7] R. Barnoski, *The Community Juvenile Accountability Act: Program Evaluation Design* (Olympia: Washington State Institute for Public Policy, 1998).
[8] The recidivism measurement period includes an 18-month follow-up period for re-offending and then a one-year period to allow for offenses to be adjudicated.
[9] R. Barnoski, *Washington State Juvenile Court Assessment Manual, Version 2.0* (Olympia: Washington State Institute for Public Policy, 1999).
[10] R. Barnoski, *Washington State's Implementation of Functional Family Therapy for Juvenile Offenders: Preliminary Findings* (Olympia: Washington State Institute for Public Policy, 2002); R. Barnoski, *Washington State's Implementation of Aggression Replacement Training for Juvenile Offenders: Preliminary Findings* (Olympia: Washington State Institute for Public Policy, 2002).
[11] R. Barnoski, *Outcome Evaluation of Washington State's Research-Based Programs for Juvenile Offenders: Appendix* (Olympia: Washington State Institute for Public Policy, 2004)

- The COS program achieved a decrease in 12-month felony recidivism and a favorable estimated benefit to cost ratio of $7.89.
- Because of problems implementing the Institute's evaluation design, no findings are associated with Multi-Systemic Therapy (MST). If the courts and the state wish to continue funding MST, the Institute recommends re-evaluating the program.

For these programs to achieve success, this evaluation found that the programs must be consistently delivered in a competent manner that follows the programs' specifications. In fact, the findings indicate that incompetent delivery may increase recidivism of participants. Without quality assurance efforts, the program may not only fail to reduce recidivism, it may actually increase recidivism.

The 2003 Washington State Legislature acted on the Institute's preliminary CJAA evaluation results[12] by directing the Institute to develop adherence and outcome standards for juvenile justice research-based programs.[13] The subsequent Institute report[14] includes guidelines for overseeing the delivery of programs and developing quality assurance measures. The CJAA statue requires JRA to submit annual reports to the legislature about the CJAA programs. The Institute's report recommends that JRA present measures of adherence to the standards in their annual reports. The Institute's recommended adherence standards include measures of competent program delivery, estimated recidivism reductions, and estimated returns from the state's investment in research-based programs. The legislation also states that courts shall not continue to use programs that do not comply with these standards.

The legislature took a calculated risk when it launched a policy to identify and fund research-based programs. Additionally, policymakers invested resources in a rigorous outcome evaluation to learn whether the programs are a cost-effective state investment. The gamble paid off; this evaluation found that using research-based programs can produce benefits to taxpayers in excess of their costs.

Exhibit 1
Summary of Outcome Evaluation Findings

Program	Number of Youth		Adjusted 18-Month Felony Recidivism [A]		Reduction in Recidivism	Benefit to Cost [B] (2002 Dollars)
	Control	Program	Control	Program		
Functional Family Therapy: Competent	313	181	27.0%	16.7%	-38.1%**	+$10.69
Functional Family Therapy: Not Competent	313	206	27.0%	31.5%	+16.7%	-$4.18
Functional Family Therapy: Total	313	387	27.0%	24.2%	-10.4%	+$2.77
Aggression Replacement Training: Competent	417	501	24.8%	18.8%	-24.2%**	+$11.66
Aggression Replacement Training: Not Competent	108	203	24.8%	26.5%	+6.9%	-$3.10
Aggression Replacement Training: Total	525	704	24.8%	20.8%	-16.1%	+$6.71
Coordination of Services[C]	171	171	3.3%	1.4%	-57.6%*	+$7.89

[A] Recidivism is defined as reconvictions in the Washington State court system. The rates shown are adjusted to account for systematic differences between the program and control groups using means in the equations from the logistic regressions.

[B] To be conservative, the benefit-cost ratios are based on reduced estimates of program effects to account for the less-than-random-assignment research designs. The FFT effect size was reduced 25 percent, ART 50 percent, and COS 50 percent. The estimated cost per youth is $2,100 for FFT, $745 for ART, and $400 for COS.

[C] Adjusted 12-month felony recidivism rate.

* Statistically significant reduction in recidivism at the .15 level.

** Statistically significant reduction in recidivism at the .05 level.

[12] Barnoski, *Washington State's Implementation of Functional Family Therapy for Juvenile Offenders;* Barnoski, *Washington State's Implementation of Aggression Replacement Training for Juvenile Offenders*.

[13] RCW 13.40.530

[14] R. Barnoski, S. Aos, R. Lieb, *Recommended Quality Control Standards: Washington State Research-Based Juvenile Offender Programs* (Olympia: Washington State Institute for Public Policy, December 2003).

SECTION II: EVALUATION DESIGN

The 1997 Washington State Legislature directed the Institute to determine whether the programs funded by the CJAA reduce recidivism. The best way to answer this question is to compare the recidivism rates of eligible youth randomly assigned to either the control or the program group.[15] Any outcome differences between the two groups can then be attributed to the program. Since this approach was not seen as feasible by all juvenile courts, a pseudo-random assignment process was used. For the CJAA evaluation, control groups of juvenile offenders who did not receive a CJAA program were selected using the "waiting line" approach. This method takes advantage of the fact that CJAA resources were not sufficient to allow every eligible youth to enter a CJAA program.

In the waiting line approach, all juvenile offenders are assessed by court staff using the Washington State Juvenile Court Assessment (WSJCA).[16] The WSJCA was specifically developed by the Institute and the juvenile courts for the CJAA because the enabling legislation required youth be screened for program eligibility and an assessment be used to determine the programs most likely to change behaviors of juvenile offenders.

The WSJCA involves a two-stage process. First, all adjudicated youth are assessed with a pre-screen instrument that determines the youth's level of risk. The level of risk is determined by the pre-screen criminal history and social history risk scores. Second, only the moderate- to high-risk youth are assessed with the full instrument to determine their risk profile.

The full assessment is organized into nine domains: school, free-time, employment, relationships, family (current and prior), drug/alcohol, mental health, anti-social attitudes, and skills. For each domain, a risk or protective factor score is computed. Another score was developed to measure aggression.

The validity of both the pre-screen and full WSJCA is supported by an Institute study.[17] The eligibility criteria developed by the CJAA Committee for the four treatment programs are displayed in Exhibit 2.

These criteria match the youth's risk profile to the program that addresses those risk factors.

Exhibit 2
CJAA Program Eligibility Criteria

CJAA PROGRAM	ELIGIBILITY CRITERIA
Coordination of Services	Low-risk.
Aggression Replacement Training	Moderate- or high-risk, and: a score of at least one for a weapon, violent misdemeanor, or felony conviction; or a dynamic risk factor score of at least 2 out of 13 on aggression; or a dynamic risk factor score of at least 7 out of 28 on attitudes/behavior; or a dynamic risk factor score of at least 9 out of 36 on skills.
Functional Family Therapy	Moderate- or high-risk and a dynamic risk factor score of at least 6 out of 24 on current family.
Multi-Systemic Therapy	High-risk and a dynamic risk factor score of at least 6 out of 24 on current family.

Youth who met the selection criteria and had a sufficient period of time on supervision to complete the program were assigned by court staff to the appropriate CJAA program.[18] When the program reached capacity (all therapists had full caseloads or sessions were full), the remaining eligible youth were assigned by court staff to the control group and never participated in the program; instead, they received the usual juvenile court services. The assignment process started in July 1999, and sufficient sample sizes were attained by September 2000.

The procedures for this assignment process varied from court to court. In some courts, the assignment of youth was random (using the last digit of their juvenile number), in some courts it occurred on a first-come, first-served basis, while in others, the courts exercised some discretion in group assignments.

Discussions with court staff in some counties indicated that youth viewed as most in need of services may have received preferential assignment to the program groups. Because of this potential bias in the assignment process, the evaluation's analyses use multivariate statistical techniques to control for systemic differences between the program and control groups on key characteristics

[15] R. Barnoski, *Standards for Improving Research Effectiveness in Adult and Juvenile Justice* (Olympia: Washington State Institute for Public Policy, December 1997).
[16] Barnoski, *Washington State Juvenile Court Assessment Manual.*
[17] R. Barnoski, *Assessing Risk for Re-Offense: Validating the Washington State Juvenile Court Assessment* (Olympia: Washington State Institute for Public Policy, forthcoming).
[18] Some exceptions were created for youth with mental health and acute drug/alcohol problems that would prevent participation in the program.

from the WSJCA (gender, age, and domain risk and protective factor scores). From these analyses, mean-adjusted recidivism rates are calculated. These adjusted rates provide estimates of the impact of the program which are not confounded by systematic differences between the groups.[19]

The evaluation design incorporated a time period for service providers to learn the treatment program before youth were included in the outcome evaluation. For the FFT and MST interventions, only youth whose service provider had at least 90 days of supervised experience were included in the study. Because the Institute did not have access to the identities of ART instructors for each class, it was not possible to follow this procedure. As a remedy, ART participants during the first year of implementation are excluded from the study.

To measure recidivism, the Institute follows the definition for recidivism established by the 1997 Legislature.[20] Recidivism is measured using conviction rates for subsequent juvenile or adult offenses. In Washington, all convictions in juvenile and adult criminal courts are recorded in statewide databases maintained by the state's Administrative Office of the Courts and the Department of Corrections. Three reconviction rates are reported:

- Total misdemeanor and felony convictions;
- Felony convictions; and
- Violent felony convictions.

The follow-up "at-risk" period for each youth is 18 months.[21] In calculating rates, the Institute allows a 12-month period for an offense to be adjudicated by the courts.

This research design provides a strong means to test whether the CJAA programs lowered recidivism rates. As previously mentioned, this is not a perfect random assignment research design, because the treatment and control groups may differ for reasons other than CJAA program participation. Fortunately, the WSJCA data allow for rigorous statistical modeling to control for potential pre-existing differences.

SECTION III: FUNCTIONAL FAMILY THERAPY

What Is Functional Family Therapy? Functional Family Therapy (FFT) is a structured family-based intervention that works to enhance protective factors and reduce risk factors in the family. FFT is a three-phase program. The first phase is designed to motivate the family toward change. The second phase teaches the family how to change a specific critical problem identified in the first phase. The final phase helps the family generalize their problem-solving skills.[22] FFT has been identified by the University of Colorado's Center for the Study and Prevention of Violence as a Blueprint Program.[23]

Trained FFT therapists have caseloads of 10 to 12 families, and the intervention involves about 12 visits during a 90-day period. Between January 1999 and September 2001, 14 of Washington's 34 juvenile courts implemented FFT, and approximately 400 families and 40 therapists participated in the program. Court staff use the WSJCA to assess whether youth are eligible for FFT: a youth must have at least a moderate-risk level with family problems indicated by a family dynamic risk factor score above the eligibility cut-off value (6 out of 24 points).

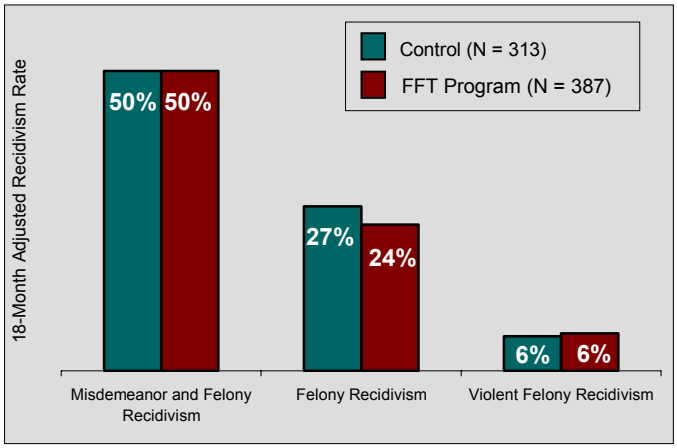
The average cost of FFT reported by JRA is $2,100 per family. Some juvenile courts trained their own staff as therapists, some courts hired therapists, while other courts contracted with private therapists. FFT, Inc., now based in Seattle, trains and supervises the clinical practices of FFT therapists.

The question for this study is whether FFT works in a setting where FFT, Inc. is *not* directly involved with the families. That is, can FFT be implemented by 14 independent juvenile courts with sufficient consistency and program fidelity to reduce recidivism and make the $2,100 cost per program participant a wise use of taxpayer dollars?

[19] These calculations use the means of the WSJCA factors of the total sample for both the program and control groups in determining the adjusted rate. Barnoski*, Outcome Evaluation Appendix*.
[20] Barnoski, *Standards for Improving Research Effectiveness*.
[21] One CJAA program, Coordination of Services, was not implemented until 2001, and, therefore, only a 12-month follow-up period could be measured.
[22] For information about Functional Family Therapy, see <www.fftinc.com>.
[23] Panels of experts have determined that Blueprint Programs meet a standard of scientific evidence which provides a high degree of confidence that the programs can achieve their objectives. See <www.colorado.edu/cspv/blueprints>.

FFT Results: Exhibit 3 shows the three adjusted 18-month recidivism rates for youth in the control group versus all youth receiving FFT, regardless of therapist competence.[24] For example, the adjusted 18-month felony recidivism rate for the control group is 27 percent compared with 24 percent for the FFT group. There are no statistically significant differences for the three types of recidivism. Does this mean that, contrary to the national FFT findings, FFT in Washington State does not reduce recidivism? The next section takes a look "under the hood" to better understand these results.

Exhibit 3
Adjusted 18-Month Recidivism Rates
FFT vs. Control Group



No statistically significant differences.

Therapist Adherence to FFT: Although the courts hire or contract with the therapists, JRA and FFT, Inc. manage the quality assurance process for the FFT therapists in Washington State. State funding was used to assign a qualified JRA staff person with a master's degree in counseling (Dana Phelps) to receive FFT, Inc. training and help manage FFT delivery. Ms. Phelps assisted FFT with training, therapists' consultations, and corrective actions throughout the state. As a result, she became very familiar with all the state's FFT therapists.

Because Washington's experience was the first statewide implementation of FFT in the nation, the process of program management on a large scale was developed as the program was implemented. That is, the therapists were learning FFT, and the state and FFT, Inc. were learning how to train and manage a large number of therapists. FFT, Inc.'s computer information system for recording data about therapist competence was completed after the evaluation was underway. Therefore, the therapist ratings used for this evaluation were based on Ms. Phelps' recollections, combined with those of the FFT, Inc. consultants, rather than "real time" measurement. The ratings were obtained before Ms. Phelps knew any of the study outcomes.

Despite the imprecise rating of therapists during the study period, the preliminary FFT findings[25] demonstrated that the group of FFT therapists rated as competent had reduced the 12-month felony recidivism rates of youth (p=.08). In addition, the preliminary results showed that the group of therapists who were not competent may have *increased* the felony recidivism rates of youth. Since the ratings created valid distinctions among therapists, the ratings continued to be used.

Exhibit 4 displays, for each therapist group, the number of therapists during the study period with a minimum 90 days of supervised experience delivering FFT. The exhibit also includes the number of families seen by these therapists. Therapists judged as highly competent and competent are combined into a total competent group, and those rated as either not competent or borderline competent are combined into a total not competent group. Together, 48.4 percent (16) of the 33 therapists are rated by FFT, Inc. and JRA as competent or highly competent; these therapists treated 46.8 percent of the families in the study.

Exhibit 4
FFT Therapist Competence Ratings

FFT Therapist Groups	Therapists		Families	
	Number	Percent-age	Number	Percent-age
Not Competent	11	33.3	118	30.5
Borderline	6	18.2	88	22.7
Total Not Competent	**17**	**51.5**	**206**	**53.2**
Competent	8	24.2	103	26.6
Highly Competent	8	24.2	78	20.2
Total Competent	**16**	**48.4**	**181**	**46.8**
Total	**33**	**100.0**	**387**	**100.0**

Note: Four therapists are excluded because their competence was not known by the raters.

Exhibit 5 compares key characteristics of youth in the three study groups. These characteristics, based on the WSJCA, include age and gender, the

[24] The multivariate statistical analyses use data from the WSJCA (gender, age, criminal history, social history, and other risk and protective factors) to control for systemic differences between the program and control groups. The calculations for the adjusted recidivism rates from the multivariate logistic regression are given in *Outcome Evaluation Appendix,* Exhibit A-1.

[25] Barnoski, *Washington State's Implementation of Functional Family Therapy for Juvenile Offenders.*

two pre-screen risk scores, as well as the full assessment domain scores.

Exhibit 5
Comparison of WSJCA Characteristics for Control and FFT Groups

Variable	Control Group	Youth Seen by Competent Therapists	Youth Seen by Not Competent Therapists
Number of Youth	**313**	**181**	**206**
Male Gender[A]	80%	81%	75%
Age[AB]			
13	10%	18%	11%
14	16%	19%	18%
15	21%	25%	23%
16	24%	20%	26%
17	29%	18%	21%
Average Age[AB]	15.5	15.0	15.3
Pre-Screen Average Risk Scores			
Criminal History[A]	8.0	7.7	7.1
Social History	9.0	9.3	9.1
Full Assessment Average Domain Risk Scores			
Aggression	2.2	2.4	2.3
Attitude[AB]	8.5	9.5	8.5
Drug/Alcohol	5.4	5.4	5.3
Employment (Protective)[B]	1.4	1.0	1.1
Family	14.1	14.3	13.6
Free-Time	2.0	2.0	1.9
Mental Health[A]	2.1	2.3	1.9
Prior Family[A]	15.3	15.9	15.0
Relationship[A]	10.9	10.3	12.6
School	11.5	12.5	12.7
Skill	18.8	19.5	18.7

[A] Statistically significant difference between youth seen by therapists rated competent versus those seen by therapists not competent.
[B] Statistically significant difference between youth seen by competent therapists versus those in the control group.

Statistically significant differences were found between the study groups on several characteristics.

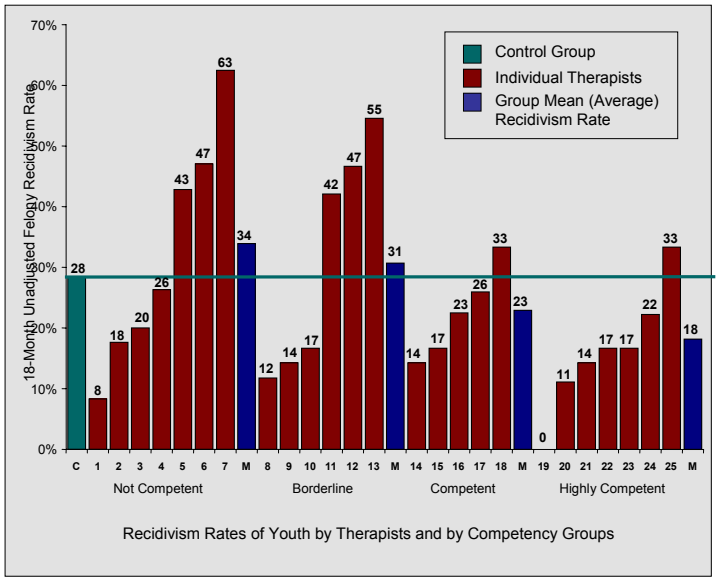
Competent Therapists Versus Control Group: For youth seen by competent therapists versus those in the control group, statistically significant differences exist for these variables: age, attitude, and employment. These differences indicate that the youth seen by competent therapists are slightly higher risk than youth in the control group ($p<.05$).

Competent Versus Not Competent Therapists: Comparing youth seen by competent FFT therapists with those seen by therapists who are not competent, the following characteristics are significantly different: gender, age, criminal history, attitude, employment (protective), mental health, prior family, and relationships. With the exception of relationships, the competent therapists saw youth whose characteristics indicate a higher risk to re-offend.

These findings may indicate two flaws in the assignment process: youth viewed as most in need of services may have received preferential assignment to FFT rather than the control group, and the higher-risk youth may have received preferential assignment to the better therapists. Multivariate statistical analyses were used to compensate for these differences; the findings are as follows.

Therapists' FFT Competence and Recidivism Outcomes: Exhibit 6 shows the felony recidivism rates for youth grouped by their individual therapist's competence rating. The mean (average) recidivism rates for each therapist group and the control group are also included. The results are for the 25 therapists who saw at least six youth.

Exhibit 6
18-Month Felony Recidivism Rates for Youth Assigned to Individual FFT Therapists



The exhibit shows that the youth in the competent and highly competent therapist groups have lower average felony recidivism rates than the youth in either the control group or the not competent or borderline competent therapist groups. These results occurred even though the competent and highly competent therapists were assigned, on average, slightly higher-risk youth. Exhibit 6 also shows that within each group of therapists, the recidivism rates vary considerably. In particular, the youth treated by five therapists judged as not competent or borderline competent have low recidivism rates (therapists 1, 2, 8, 9, and 10).

Conversely, the youth seen by two therapists judged as competent or highly competent have high recidivism rates (therapists 18 and 25). One possible explanation for these results is that some therapists may be misclassified.

To determine the relationship between therapist competence and recidivism, competence is included as an additional variable in the multivariate analysis. Exhibit 7 compares the resulting 18-month adjusted recidivism rates for three study groups. Exhibit 8 presents the same data by the more detailed rating of therapist competence.[26]

Youth seen by the competent therapists have an 17 percent felony recidivism rate compared with 27 percent for the control group, a statistically significant reduction of 38 percent. For violent felony recidivism, the competent therapist group has a 3 percent rate compared with 6 percent for the control group, a 50 percent reduction that is statistically significant at the p=.115 probability level.

Exhibit 7
Adjusted 18-Month Recidivism Rates: Control vs. Not Competent and Competent FFT Therapist Groups

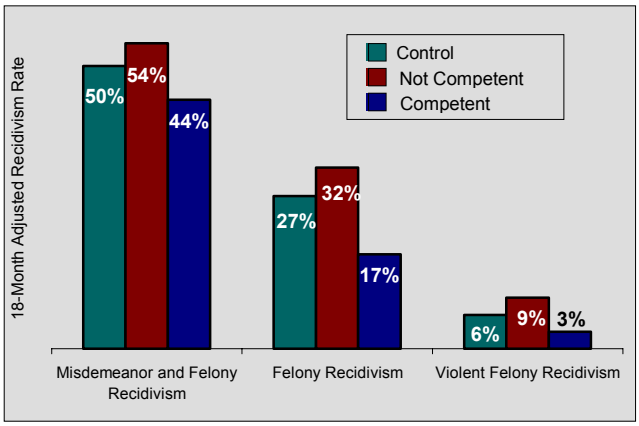


Exhibit 8
Adjusted 18-Month Recidivism Rates
Control vs. FFT Therapist Groups

Study Group	Misdemeanor and Felony	Felony	Violent Felony
Control	**49.6%**	**27.0%**	**5.5%**
Not Competent	51.2%	32.8%	10.7%
Borderline	58.3%	29.9%	7.8%
Total Not Competent	**54.3%**	**31.5%**	**9.5%***
Competent	49.1%	17.6%*	3.1%
Highly Competent	37.3%	15.3%*	2.4%
Total Competent	**44.1%**	**16.7%***	**2.8%**
All FFT Youth	**49.6%**	**24.2%**	**6.2%**

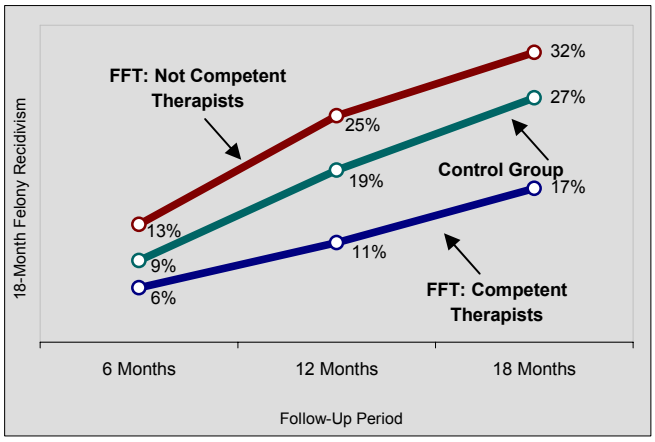
*Statistically significant at the .05 probability level.

[26] The calculations for the adjusted recidivism rates from the multivariate logistic regression are given in *Outcome Evaluation Appendix,* Exhibit A-2.

The results shown in Exhibits 6 through 8 illustrate the critical role of FFT therapist competence. This finding is especially significant, because recidivism may be exacerbated by therapists who do not competently follow the model.

The next step in examining FFT effectiveness is to see how well the reductions in recidivism by competent therapists hold up over time. For this sample, we examine 6-month, 12-month, and 18-month adjusted felony recidivism rates.[27] Exhibit 9 compares these adjusted rates for the three study groups over time. The reduction in felony recidivism between the control and competent therapist groups at 12 months is 40 percent compared with 38 percent at 18 months, indicating that FFT's suppression effect on felony recidivism is relatively constant.

Exhibit 9
Adjusted Felony Recidivism Rates at 6-, 12-, and 18-Month Follow-up Periods



FFT Cost-Benefit Analysis: The cost-benefit analysis, described in Section VII, determines whether Washington citizens receive a positive return on their dollars spent on FFT. When FFT is delivered by competent therapists, it generates $10.69 in benefits (avoided crime costs) for each dollar spent on the program. When not competently delivered, FFT costs the taxpayer $4.18. Averaging these results for all youth receiving FFT, regardless of therapist competence, results in a net savings of $2.77 per dollar of costs.

FFT Conclusions: When the FFT model is delivered competently, the program reduces felony and violent felony recidivism cost effectively.

[27] The Institute will continue tracking the recidivism of these groups to determine if the FFT effect is sustained over longer follow-up periods. The calculations for the adjusted recidivism rates from the multivariate logistic regression are given in *Outcome Evaluation Appendix,* Exhibit A-3.

SECTION IV: AGGRESSION REPLACEMENT TRAINING

What Is Aggression Replacement Training?
Aggression Replacement Training (ART) is a 10-week, 30-hour intervention administered to groups of 8 to 12 juvenile offenders three times per week. The program relies on repetitive learning techniques to teach participants to control impulsiveness and anger and use more appropriate behaviors. In addition, guided group discussion is used to correct anti-social thinking. Although ART does not meet the strict scientific standards required to be a Blueprint Program by the Center for the Study and Prevention of Violence, three research studies support the effectiveness of ART in reducing recidivism.[28]

The CJAA Committee decided that CJAA funds could be used for ART when court probation staff or private contractors received Washington State ART training. The cost for ART in Washington State is approximately $745 per youth.

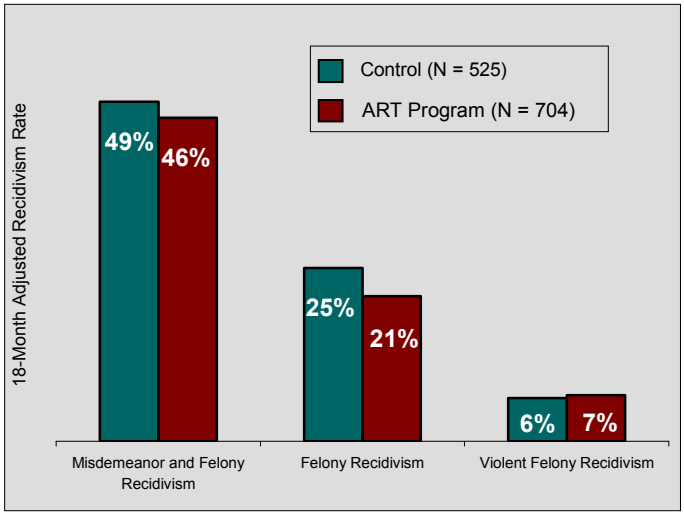
The CJAA Committee established the eligibility criteria for ART. Eligible youth must have at least a moderate risk level. In addition, the youth must have a problem with aggression, pro-social attitudes, or pro-social skills as indicated by relevant scores on the WSJCA scales.[29]

ART was the most widely implemented CJAA program, with 26 juvenile courts participating and more than 100 instructors. During the first year, courts were sending new instructors to training, replacing existing instructors, and changing instructional teams. Information identifying individual ART instructors was not recorded by the courts, so it was not possible to know the level of instructor expertise for individual youth.

Because of this flux in instructors during the first year, questions emerged about the quality of the program's delivery during 1999, the first year of implementation. A multivariate analysis of 18-month felony recidivism[30] revealed that, compared with control group youth, youth receiving ART during 2000 had significantly better results than youth receiving ART during 1999. To allow for the courts to gain sufficient experience and stability in the delivery of ART, this study excludes youth assigned to ART and the control groups during 1999 and only includes youth assigned during 2000.

ART Results: Exhibit 10 shows the three adjusted recidivism rates of youth in the control group versus the ART group for 2000.[31] The 18-month adjusted felony recidivism rate for the control group is 25 percent compared with 21 percent for ART (a 16 percent reduction in felony recidivism rates). The finding for felony recidivism is statistically significant at the p=.125 probability level. There are no statistically significant differences in misdemeanor and felony recidivism and violent felony recidivism rates. As with FFT, we now examine how competent delivery affects these results.

Exhibit 10
Adjusted 18-Month Recidivism Rates
Control vs. ART Groups During 2000



Instructional Team Adherence to ART: Unlike Functional Family Therapy and Multi-Systemic Therapy, no national organization provides training and consultation for ART. Although Barry Glick, an expert from New York State, provided the initial training in Washington State, the juvenile courts and JRA had to develop the quality assurance capacity for this program. Fortunately, the state already had a well respected expert in ART, Chris Hayes from Snohomish County Juvenile Court. Mr. Hayes worked with JRA on a half-time basis to train CJAA-funded ART instructors, establish a quality assurance process and a training curriculum, as well as a procedures manual.

[28] Aos, et al., *The Comparative Costs and Benefits of Programs to Reduce Crime.*
[29] A score of at least one for a weapon, violent misdemeanor, or felony conviction or a dynamic risk factor score of at least 2 out of 13 on aggression; dynamic risk factor score of at least 7 out of 28 on attitudes/behavior or a dynamic risk factor score of at least 9 out of 36 on skills.
[30] Logistic regression was used with an interaction term accounting for the study year and study group (ART vs. control). The interaction term was statistically significant (p<.07) and indicated better outcomes in the year 2000.
[31] The calculations for the adjusted recidivism rates from the logistic models are given in *Outcome Evaluation Appendix,* Exhibit B-1.

When analyzing data for the Institute's preliminary report, we found the effectiveness of ART in reducing recidivism varied from court to court.[32] In response, the Institute asked Mr. Hayes to rate various attributes of ART delivery in each court. Because he was not able to observe every instructional team, Mr. Hayes could only provide information for each court as a whole. The ratings would have been more accurate if they were applied to each instructional team. Despite this shortcoming, the preliminary report found that the courts judged to be competently delivering ART had significantly reduced 12-month felony recidivism (p=.05). Mr. Hayes' ratings are used in this report.

In addition, Mr. Hayes identified two courts that consistently delivered ART with the highest degree of fidelity to the model: Okanogan and Pierce. The ratings of competent and highly competent ART courts are comparable to the ratings of competent and highly competent FFT therapists.

Exhibit 11 presents the number of courts and youth involved in the ART evaluation during 2000. Five courts were rated as not delivering ART competently; 108 youth were in the control group and 203 in ART. Twenty-one courts were judged as delivering ART competently to 501 youth. The two highly competent courts provided ART to 99 youth.

Exhibit 11
ART Evaluation Study Groups in 2000

ART Group	Number of Courts	Number of Youth		
		Control	ART	Total
Not Competent	**5**	**108**	**203**	**311**
Competent	19	299	402	701
Highly Competent	2	118	99	217
Total Competent	**21**	**417**	**501**	**918**
Total	**26**	**525**	**704**	**1,229**

The characteristics of the control and ART groups in the year 2000 are compared in Exhibit 12.

Exhibit 12
Comparison of Characteristics Between Control Group and ART Groups in 2000 for Competent and Not Competent Delivery of ART Courts

Variable	All ART Courts		Competent ART Delivery		Not Competent ART Delivery	
	Control	ART	Control	ART	Control	ART
Number of Youth	525	704	417	501	108	203
Male	81%	80%	81%	81%	81%	79%
Age at Adjudication	15.5	15.2**	15.4	15.1**	15.6	15.4
Criminal History	8.1	8.3	7.7	7.9	9.5	9.4
Social History	8.6	8.1**	8.6	8.2*	8.4	7.9
Aggression	2.1	2.3	2.1	2.2	2.1	2.3
Drug/Alcohol	5.2	4.5**	5.1	4.5**	5.5	4.5*
Employment (Protective)	1.4	1.0**	1.4	1.0**	1.5	0.9**
Family	9.0	9.1	9.3	9.7	8.0	7.4
Free-Time	1.7	1.6	1.7	1.6	1.9	1.7
Mental Health	2.2	2.1	2.3	2.2	1.9	1.8
Prior Family	12.8	12.1	13.4	12.8	10.7	10.3
Relationship	9.8	9.1	10.0	9.6	8.8	7.8
School	11.5	10.6**	11.7	10.8*	10.9	10.1
Skill	17.8	17.7	18.4	18.8	15.2	14.9
Attitude	7.5	7.5	7.7	7.8	6.6	6.7

* Statistically significant difference at the .05 probability level.
**Statistically significant difference at the .01 probability level.

All ART Courts: For ART and control group youth in all courts, five variables have statistically significant differences between the groups: age, social history risk, drug/alcohol risk, employment (protective), and school risk. For example, the average age of ART youth is 15.2, while the average age of control group youth is 15.5. Lower age indicates increased risk.

Competent ART Delivery: For the courts judged competent, significant differences exist between the control and ART group youth on five variables. The competent ART group has lower risk scores than the control group on social history, drug/alcohol, and school risk, but a lower protective factor score for employment. The average age of ART youth is 15.1, while the average age of control group youth is 15.4.

Not Competent ART Delivery: For the courts judged not competent, statistically significant differences also exist between the ART and control groups; in this case for two variables: drug/alcohol risk and employment. The ART group has a lower drug/alcohol risk but a lower protective factor score for employment.

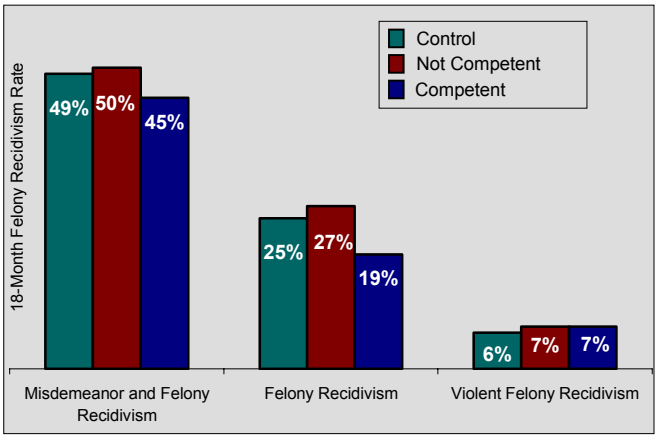
[32] Barnoski, *Washington State's Implementation of Aggression Replacement Training for Juvenile Offenders.*

In conclusion, there are some differences between the youth in ART and those in the control group. Multivariate statistical analyses are, therefore, used next to adjust for these systematic differences.

ART Court Competency Ratings and Felony Recidivism: Exhibit 13 displays the adjusted felony recidivism rates by court competency ratings. Exhibit 14 presents the same data by the more detailed rating of competence.[33] The exhibits illustrated these findings:

- For the five courts rated as not competent, the adjusted 18-month felony recidivism rate is 27 percent compared with 25 percent for the control group. This difference is not statistically significant.
- For the 21 courts rated as either competent or highly competent, the 18-month felony recidivism rate is 19 percent. This is a 24 percent reduction in felony recidivism compared with the control group, which is statistically significant.
- The two highly competent courts have statistically significant reductions in both misdemeanor and felony recidivism and felony recidivism, but not violent felony recidivism.

Exhibit 13
Reductions in 18-Month Felony Recidivism By the Competency Ratings of the Courts



These findings are similar to those in the preliminary report which were based on 12-month recidivism rates and included youth in the study during 1999. The competency ratings continue to influence the results for ART on felony recidivism during its second year. The next step is to see how well these results hold up over time.

[33] The calculations for the adjusted recidivism rates from the logistic models are given in *Outcome Evaluation Appendix,* Exhibit B-2.

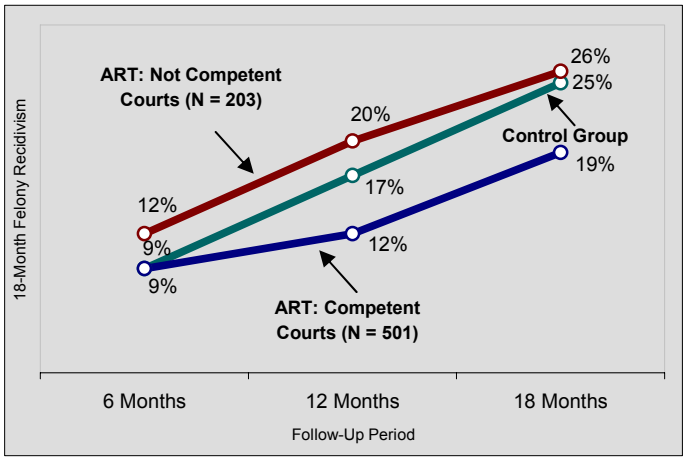
Exhibit 14
Adjusted 18-Month Recidivism Rates Control vs. ART Groups in 2000

Study Group	Youth	Misdemeanor and Felony	Felony	Violent Felony
Control	**525**	**48.6%**	**24.8%**	**6.2%**
Not Competent	**203**	**50.4%**	**26.5%**	**6.8%**
Competent	402	47.0%	20.3%	6.6%
Highly Competent	99	36.4%*	12.9%*	6.4%
Total Competent	**501**	**44.9%**	**18.8%***	**6.6%**
All ART Youth	**704**	**46.3%**	**20.8%**	**6.6%**

* Statistically significant at the .05 probability level.

In Exhibit 15, the 6-month, 12-month, and 18-month adjusted felony recidivism rates are displayed for the control group and the competent and not competent ART court groups during 2000.[34] The exhibit illustrates that the differences between the control and competent ART court groups first appear at the 12-month follow-up period and continue to the 18-month period. Conversely, the difference that existed at 6-months between the control and not competent ART court groups disappeared by the 18-month period.

Exhibit 15
Adjusted Felony Recidivism Rates 6-, 12-, and 18-Month Follow-up Periods



ART Cost-Benefit Analysis: The cost-benefit analysis, described in Section VII, determines whether Washington citizens receive a positive return on their dollars spent on ART. These analyses find that ART generates $6.71 in benefits (avoided crime costs) for each taxpayer dollar spent on the program. For courts where ART was competently delivered, the savings are greater—$11.66 in benefits for each dollar spent on the program.

[34] The calculations for adjusted recidivism rates from the logistic models are given in *Outcome Evaluation Appendix,* Exhibit B-3.

ART Conclusions: When ART is delivered competently, the program reduces felony recidivism and is cost effective. For courts rated as competent in delivering ART during 2000, there was a 24 percent reduction in 18-month felony recidivism compared with the control group, which is statistically significant. There is clear evidence that outcomes for ART have improved between its first and second year of operation in Washington, presumably because the courts and program instructors are getting better at delivering ART.

SECTION V: COORDINATION OF SERVICES

What Is Coordination of Services? Coordination of Services (COS), developed by Patrick Tolan, Ph.D.,[35] provides an educational program to low-risk juvenile offenders and their parents. The goals of COS are to describe the consequences of continued delinquent behavior, stimulate goal setting, review the strengths of the youth and family, and explain what resources are available for helping to achieve a positive pro-social future for the youth. COS is not a Blueprint Program, having one outcome study supporting this program's effectiveness in reducing recidivism.[36]

COS was implemented in the Snohomish County Juvenile Court and called the "WayOut" program; Dr. Tolan consulted in training the program providers. WayOut consists of two all-day classes scheduled on consecutive Saturdays. In addition to the juvenile court, several community groups participate in the program: YMCA, WSU Cooperative Extension, Compass Health, 4-H, Snohomish Police, CORE Teen Seminars, and Snohomish County Health Communities Task Force. WayOut costs approximately $400 per family.

The following are key features of WayOut:

- Low-risk juvenile offenders are court-mandated to attend, thus assuring a captive audience of youth who are at a crossroads when early intervention can make a difference.
- Parents/guardians are also required to attend, thus providing an opportunity to teach parent and child the same skills simultaneously. Additionally, the participants are given a vehicle to open lines of communication and make shifts in thinking.
- Community groups present participants with information concerning the services they provide.

Graduating from WayOut allows the juvenile participants to complete their court-mandated community service hours. The WayOut program coordinator reported that during 2000, ten two-day educational seminars were conducted. Over 90 percent of the youth assigned to the program attended with a parent or guardian.

Adherence to the COS Model: The Institute did not obtain ratings of how well WayOut followed Dr. Tolan's COS model. Conversations with the WayOut service providers indicated they adjusted the original design somewhat.

Evaluation Design: The evaluation design for COS is different from FFT and ART. To simplify procedures for juvenile court staff, the Institute created the control group from the full population of low-risk youth in Snohomish County. Pre-screen data from the WSJCA were used for matching, because a full assessment is not completed for low-risk youth.

Individual control group youth were matched to each WayOut youth on risk level, age, gender, criminal history score, and social history score. Each control group youth had the same risk level, age, and gender values as the WayOut youth. In addition, the WayOut and control youth were matched to within three points, out of a 31 possible points, on criminal history scores, and to within three points on social history scores (18 possible points).

The follow-up period had to be altered for the evaluation of WayOut. The Institute's data on WayOut youth starts in 2000, so only a 12-month follow-up period could be used for the 342 youth in the study sample.

[35] Director, Institute for Juvenile Research, University of Illinois at Chicago.
[36] Patrick Tolan, M. Shelley Perry, Theodore Jones, "Delinquency Prevention: An Example of Consultation in Rural Community Mental Health," *Journal of Community Psychology* 15 (1987): 43-50.

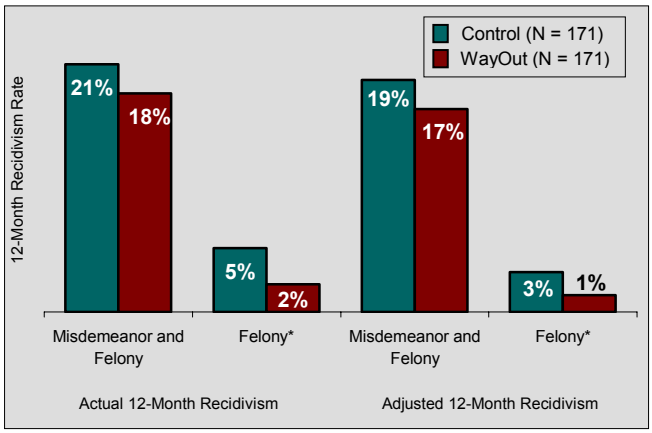
Exhibit 16 displays key characteristics of WayOut and control group youth. No differences were found between the groups.

Exhibit 16
Comparison of Characteristics Between Control and WayOut Groups

VARIABLE		CONTROL	WAYOUT
Number of Youth		171	171
Male		74.9%	74.9%
Age		15.4	15.4
Criminal History		4.3	4.3
Social History		3.6	3.6
Risk Level:	Low	87.1%	87.1%
	Moderate	8.8%	8.8%
	High	4.1%	4.1%

WayOut Results: Exhibit 17 shows both the adjusted and actual 12-month felony recidicivism rates for WayOut and the control groups.[37] Because these are mostly low-risk youth, the number of those re-offending was expected to be relatively small. Of the 342 youth in the sample, 63 re-offended with a misdemeanor, and 13 re-offended with a felony. These low recidivism rates make it less likely to observe statistically significant differences between the groups. Only three youth re-offended with a violent felony, so the violent felony recidivism rates are too small to analyze.

Exhibit 17
Adjusted and Actual 12-Month Recidivism Rates Control vs. WayOut Groups



* Statistically significant at the .15 probability level.

The 12-month felony recidivism rate for the control group is 5 percent compared with 2 percent for the WayOut group, a 55 percent reduction. The adjusted rates are similar and produce a 59 percent reduction in 12-month felony recidivism. Both these differences are statistically significant at the p=.15 probability level. The percent reduction for misdemeanor and felony recidivism is about 12 percent; this difference is not statistically significant.

COS Cost-Benefit Analysis: The cost-benefit analysis, in Section VII of this report, determines whether Washington citizens receive a positive return on their dollars spent on COS. These analyses find that COS generates $7.89 in savings (avoided crime costs) for each taxpayer dollar spent on the program.

COS Conclusions: The program achieved a cost effective decrease in 12-month felony recidivism, which is close to statistical significance at p=.15.

SECTION VI: MULTI-SYSTEMIC THERAPY

What Is Multi-Systemic Therapy? Multi-Systemic Therapy (MST) is an intervention for youth that focuses on improving the family's capacity to overcome the known causes of delinquency.[38] Its goals are to promote parents' ability to monitor and discipline their children and replace deviant peer relationships with pro-social friendships. Like FFT, MST is a Blueprint Program.

Trained MST therapists, working in teams consisting of one Ph.D. clinician and three or four clinicians with masters' degrees, have a caseload of four to six families. The intervention typically lasts between three and six months. MST, Inc., in Charleston, South Carolina, trains and clinically supervises all MST therapists. MST, Inc. indicates that costs are approximately $5,000 per family.

Although MST is on the list of CJAA research-based programs, no juvenile court chose to implement MST using this source of funds. Rather, three counties chose to use federal funding—the Juvenile Accountability Incentive Block Grant (JAIBG). The courts contracted with two organizations to provide MST: Seattle Children's Home in King County and Bold Solutions in Pierce and Kitsap Counties. To be eligible for MST, the CJAA Committee decided that a youth must have a high risk level and family problems as indicated by a family dynamic risk factor score above the eligibility cut-off value (6 out of 24 points). Between January 1999 and September 2001, MST was delivered to 97 families.

[37] The calculations for the adjusted recidivism rates are given in *Outcome Evaluation Appendix,* Exhibit C-1.

[38] <www.mstservices.com>

Research literature has demonstrated that MST reduces recidivism of juvenile offenders when delivered by MST, Inc. therapists, or therapists under the direct supervision of MST, Inc. The question for this study is whether MST is effective in recidivism reduction in a setting where MST, Inc. is less directly involved with the families. That is, can MST be implemented successfully by three independent juvenile courts with sufficient consistency and program fidelity to reduce recidivism and make the $5,000 cost per program participant a wise use of taxpayer dollars?

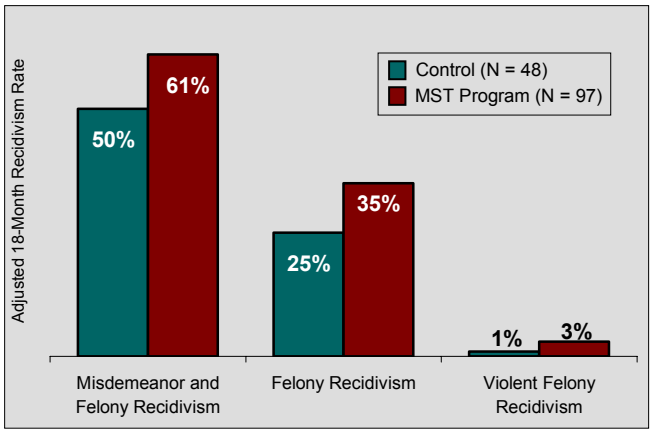
MST Implementation Problems: The research design for MST follows the designs used for FFT and ART. However, the implementation of MST differed in the following ways:

- MST was implemented in only three courts.
- JRA staff did not work closely with the MST courts and providers because MST is not funded under CJAA.
- The number of youth in the MST treatment and control groups is small, which makes finding statistically significant differences less likely.
- The number of youth assigned to individual MST therapists is small, making it difficult to calculate valid recidivism rates for the youth treated by individual therapists.
- Significant differences exist between the MST and the control groups on the WSJCA scores, which raises doubts about the comparability of these groups on key variables.
- The recidivism rates for the control groups for the two organizations are very different. This indicates a strong selection bias in assigning youth to the control or MST groups.

These differences threaten the evaluation's ability to conclusively indicate whether MST is able to reduce recidivism as implemented in Washington State.

MST Results: Exhibit 18 shows the three adjusted recidivism rates of youth in the MST study groups.[39] The 18-month adjusted felony recidivism rate for the control group is 25 percent compared with 35 percent for MST. Although it appears that MST participants had higher recidivism rates, none of the differences in recidivism rates between the two groups is statistically significant. Before reaching any conclusions, the data needs further examination.

Exhibit 18
Adjusted 18-Month Recidivism Rates
Control vs. MST Groups



No statistically significant differences.

Therapist Adherence to MST: MST, Inc. manages the quality assurance process for therapists in both agencies.

MST therapists ask each family to complete the Therapist Adherence Measure (TAM) questionnaire about their treatment. The results are used by the MST clinical supervisor to assess how well each therapist is delivering MST. The TAM measures views of the family receiving treatment and does not represent an independent assessment of how well the therapist adheres to the MST model. Therefore, the TAM was not used by the Institute for this outcome evaluation.

Another MST, Inc. instrument, the Nine Principles Review Form, is used by MST consultants to assess how well therapists follow the nine MST principles. However, no MST expert knew the therapists in both organizations well enough to assess competent delivery. Therefore, the Institute asked the clinical supervisor in the two agencies to rate their therapists retrospectively.

The rating distributions for the clinical supervisors were very different; the Children's Home ratings were much higher than the Bold Solutions ratings. This result may reflect real differences in therapist behavior, or the use of different "anchor points,"[40] by

[39] The calculations for the adjusted recidivism rates from the logistic models are given in *Outcome Evaluation Appendix,* Exhibit D-1.

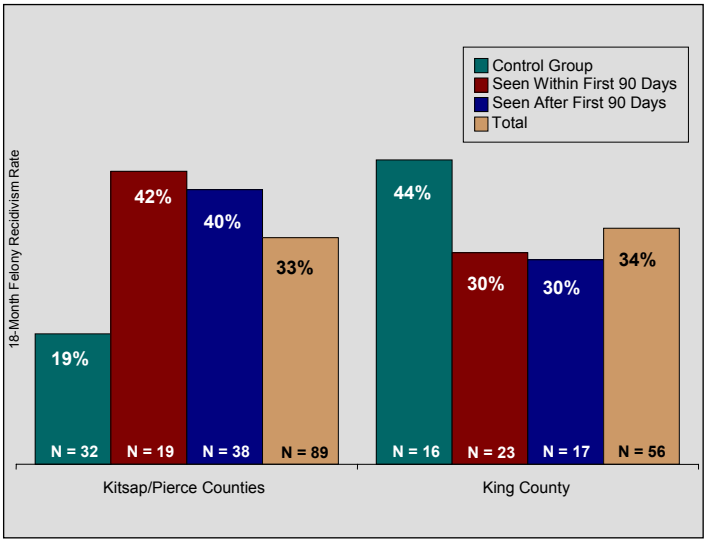
[40] An anchor point refers to the tendency to pick responses on a subjective scale within a specific range. For example, on a five-point scale, from very bad to very good, some people will anchor their responses around the scale value of 2, being uncomfortable giving high ratings, while others may anchor their responses around 4, being uncomfortable giving low ratings. This problem can be overcome by reducing the subjectivity of the scale.

the two supervisors. Even after standardizing the ratings for each supervisor,[41] only a few items from the Nine Principles Review Form were correlated with recidivism. Therefore, these ratings could not be used to assess therapist competence.

However, these results led to an examination of the outcomes for each organization. The recidivism rates of youth seen in the two courts are examined separately in Exhibit 19. The recidivism rates for youth are separated into two groups: those seen within the therapists' first 90 days of MST practice and those seen subsequently.

First, the felony recidivism rates for all youth within the two courts are similar: 33 percent for Kitsap/ Pierce and 34 percent for King. In the WSJCA validation study, the statewide 18-month felony recidivism rate for youth assessed as high risk is estimated as 33 percent. The recidivism rates of all youth in each court are nearly identical to the expected rate. This finding indicates that the youth selected for inclusion in the study for each court are comparable.

Exhibit 19
18-Month Felony Recidivism Rates for Youth in the MST Evaluation



However, the recidivism rates for the control groups for the two organizations are remarkably different: 19 percent for Kitsap/Pierce versus 44 percent for King. Correspondingly, the recidivism rates for the MST groups are also very different with Kitsap/Pierce having much higher recidivism rates than King. This result raises a concern that the assignment of cases to the MST and control groups may not have been random and may have occurred differently in the two courts. In this event, the findings could be due to the assignment process, not the program.

Exhibit 20 reveals systematic differences between the groups on key characteristics from the WSJCA. For example, in King County, 63 percent of the MST group is male compared with 100 percent of the control group. The King County MST group has significantly higher risk scores in four domains: prior family, attitude, mental health, and relationship. For Kitsap/Pierce, the MST group has higher risk scores for four domains: social history, free-time, mental health, and skill.

Exhibit 20
Comparison of MST and Control Groups On Key Characteristics

Variable	King County		Kitsap/Pierce Counties	
	Control Group	MST Group	Control Group	MST Group
Number of Youth	16	40	32	57
Male Gender	100%	63%***	78%	81%
Average Age at Adjudication	15.5	15.0	15.2	15.3
WSJCA Pre-Screen Average Risk Scores				
Criminal History	9.8	9.0	8.5	8.6
Social History	8.9	10.1	9.6	10.9**
WSJCA Full Assessment Average Risk Scores				
Family	10.6	13.0	13.8	14.5
Prior Family	11.6	16.4*	15.4	16.8
Attitude	7.8	11.9**	8.7	9.2
Drug/Alcohol	6.2	6.7	5.2	6.3
Employment (Protective)	1.0	0.9	1.6	1.1
Free Time	2.6	2.5	1.6	2.2**
Mental Health	1.2	2.7**	2.1	2.7*
Relationship	9.2	12.7*	14.0	15.2
School	11.2	13.9	12.9	12.7
Skill	21.2	21.7	17.4	21.0**
Aggression	2.2	2.5	3.1	2.5

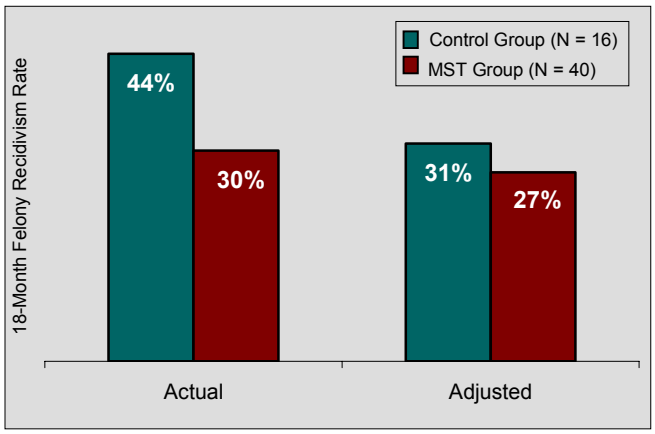
*Statistically significant at the .10 probability level.
**Statistically significant at the .05 probability level.
***Statistically significant at the .01 probability level.

Because of the differences between the study groups shown in Exhibits 19 and 20, separate multivariate analyzes for each location are necessary in an attempt to adjust for these differences.

[41] The mean rating for each supervisor was subtracted from each therapist's rating, and the resulting difference was divided by standard deviation of the supervisor's ratings.

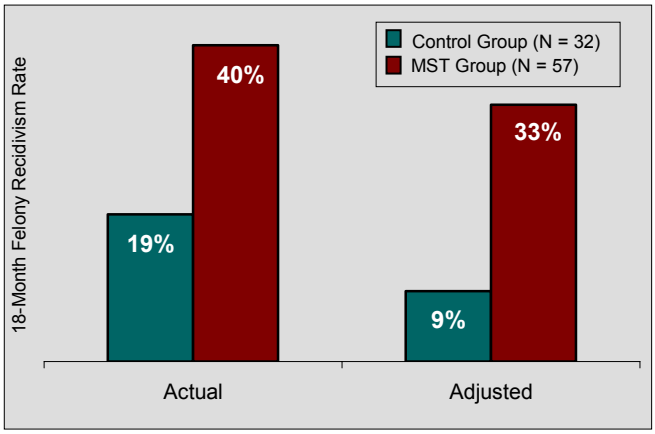
King County Analysis: Exhibit 21 shows both the adjusted and actual 18-month felony recidicivism rates for King County.[42] The model includes the same independent variables used in the modeling of outcomes for FFT. The inclusion of these independent variables reduced the recidivim rate for the control group from 44 percent to 31 percent and the MST group from 30 percent to 27 percent. That is, much of the difference in the felony recidivism rates beteween the control and MST groups arises from diiferences in the risk level between the two groups. The estimate of the effect of MST on recidivism was in the right direction, decreasing recidivism by 11.8 percent, but the difference is not statistically significant. With this small sample, much larger effect sizes are needed to achieve statistical significance.

Exhibit 21
King County Adjusted and Actual 18-Month Felony Recidivism Rates Control Group vs. MST Group



Kitsap and Pierce County Analysis: Exhibit 22 shows both the adjusted and actual 18-month felony recidicivism rates for Pierce and Kitsap Counties.[43]

Exhibit 22
Kitsap/Pierce Counties Adjusted and Actual 18-Month Felony Recidivism Rates Control Group vs. MST Group



The Kitsap/Pierce model includes the same independent variables used in the modeling of outcomes for MST in King County. The inclusion of these independent variables exacerbated the difference in recidivism rates between the control group and the MST group. The recidivism rate for the control group decreased from 19 percent to 9 percent, while the MST group's recidivism rate decreased from 40 percent to 33 percent. The estimate of the negative effect of MST on recidiism is statistically significant. These results suggest that MST youth had higher rates of recidivism in Kitsap/Pierce than the control group, or that the statistical modeling did not successfully control for systematic differences between treatment and control groups in Kitsap/Pierce.

MST Conclusions: The implementation of MST in Washington State threatened the validity of the evaluation's results. Therefore, this evaluation cannot conclusively indicate whether or not MST, as implemented in Washington State, had any effect on recidivism.

[42] The calculations for the adjusted recidivism rates are given in *Outcome Evaluation Appendix,* Exhibit C-1.
[43] The calculations for the adjusted recidivism rates are given in *Outcome Evaluation Appendix,* Exhibit D-2.

SECTION VII: COST-BENEFIT ANALYSIS

The results of the outcome evaluation of the CJAA programs were described in the preceding sections. The results included the findings of the cost-benefit analyses presented in this section. FFT, ART, and COS cost taxpayers, respectively, $2,100, $745, and $400 per program participant. The cost-benefit question is whether the reduction in recidivism, if any, leads to more benefits than costs. Simply put, are taxpayers better off as a result of the CJAA programs?

To answer this question, the Institute relied on a cost-benefit model developed in recent years.[44] The model estimates how reductions in crime translate into taxpayer benefits and crime victim benefits. For this evaluation, the model quantifies the dollar value of costs that are avoided when recidivism is reduced by FFT, ART, and COS.

To be conservative, the cost-benefit model uses reduced estimates of program effects to account for the CJAA's less-than-random-assignment research designs. The FFT effect size is reduced 25 percent, ART 50 percent, and COS 50 percent.

When crimes are avoided, taxpayers do not have to spend as much money on the criminal justice system. Fewer crimes also mean that there are fewer crime victims. This cost-benefit analysis of Washington's CJAA programs estimates the present value of avoided crimes to both taxpayers and crime victims. From the present-value sum of these benefits, we then subtract the costs of the CJAA programs to determine the economic "bottom line."

In this evaluation, we only estimated the effect that the CJAA programs have on crime outcomes. We did not attempt to determine whether the programs improve other outcomes, such as decreases in substance abuse or increases in education levels. As a result, our cost-benefit analysis does not include these other potential, but unmeasured, benefits of the CJAA programs.

Exhibit 23
Summary of Cost-Benefit Results[A]

	FFT		ART		COS
	Competent	Not Competent	Competent	Not Competent	
Change in Number of Felony Convictions as a Result of the Program, Per Program Participant	-.44	+.17	-.17	+.05	-.08
Program Costs Per Participant	$2,100	$2,100	$745	$745	$400
Program Benefits					
• Taxpayer Benefits (avoided criminal justice costs)	$9,003	-$3,521	$3,483	-$927	$1,462
• Crime Victim Monetary Costs Avoided	$4,478	-$1,751	$1,732	-$461	$570
• Crime Victim Quality of Life Costs Avoided	$8,967	-$3,507	$3,469	-$923	$1,124
• Total Taxpayer and Crime Victim Costs Avoided[B]	$22,448	-$8,779	$8,684	-$2,312	$3,155
Benefit-to-Cost Ratios From Three Perspectives					
• Taxpayer	$4.29	-$1.68	$4.68	-$1.24	$3.65
• Taxpayer and Crime Victim (Monetary Only)	$6.42	-$2.51	$7.00	-$1.86	$5.08
• Total Taxpayer and All Crime Victim	$10.69	-$4.18	$11.66	-$3.10	$7.89

[A] Detailed cost-benefit results for each program are in Appendix E.
[B] Totals may not add due to rounding.

[44] For a complete description of the cost-benefit methods we used in this analysis, see: Aos et al., *The Comparative Costs and Benefits of Programs to Reduce Crime*.

Exhibit 23 summarizes the results of the cost-benefit analysis of FFT, ART, and COS. The table shows the estimated number of felony convictions avoided by the programs from the time youth are 15 years old until they are 30 years old. Exhibit 23 also shows the per-participant cost for each program in 2002 dollars. These program costs were obtained from JRA and reflect the actual spending by the juvenile courts on the programs divided by the total number of youth who entered the program.

The program benefits section of Exhibit 23 displays the present value of the estimated benefits that are generated from the reduced crime from the three programs. The total dollar value of these benefits are shown in their three component parts: those benefits that accrue to taxpayers because of the reduced number of criminal justice system costs, those that accrue to crime victims for monetary (out-of-pocket) costs that are avoided, and those that accrue to crime victims for quality of life cost savings.

The final section of Exhibit 23 displays benefit-cost ratios (benefits divided by program costs) from three perspectives. The taxpayer perspective considers only taxpayer benefits divided by taxpayer costs. The results indicate, for example, that FFT generates $4.29 in taxpayer savings (avoided costs) for each dollar spent on the program when competently delivered. This means that from the perspective of the taxpayer, FFT is a good investment: each dollar spent will return over ten dollars (present value terms) in taxpayer savings over the next 15 years.

The additional two perspectives for the benefit-cost ratios shown in Exhibit 23 include crime victim costs avoided in addition to those that accrue just to taxpayers. The second perspective includes only so-called crime victim "monetary" costs avoided by the reduction in crime. These victim costs include only those out-of-pocket expenses (e.g. medical costs, lost wages) that victims suffer when crimes occur. The FFT program, for example, generates $6.42 in benefits for each dollar of costs when victim monetary benefits are added to the taxpayer benefits. The final perspective on program benefits includes a broader, and sometimes more controversial, definition of crime victim costs of crime: quality of life losses that victims suffer when crime occurs. After including these quality-of-life benefits, the FFT benefit-to-cost ratio increases to $10.69 of benefits per dollar of cost.[45]

To obtain the overall benefit to cost ratio for FFT and ART, regardless of therapist competence, the benefit to cost ratios for competent and not competence service are averaged.

SECTION VIII: SUMMARY OF FINDINGS

- ✓ **Functional Family Therapy**

  Youth seen by competent therapists have an 18 percent felony recidivism rate compared with 27 percent for the control group, a statistically significant reduction of 38 percent (p=.01). For violent felony recidivism, the competent therapist group has a 3 percent rate compared with 6 percent for the control group, a 50 percent reduction that is statistically significant at the p=.115 probability level.

  The cost-benefit analysis, as shown in Exhibit 1, determines whether Washington citizens receive a positive return on their dollars spent on FFT. When FFT is delivered by competent therapists, it generates $10.69 in benefits (avoided crime costs) for each dollar spent on the program. When not competently delivered, FFT costs the taxpayer $4.18. Averaging these results for all youth receiving FFT, regardless of therapist competence, results in a net savings of $2.77 per dollar of costs.

- ✓ **Aggression Replacement Training**

  For the 21 courts rated as either competent or highly competent in delivering ART, the 18-month felony recidivism rate is 19 percent. This is a 24 percent reduction in felony recidivism compared with the control group, which is statistically significant (p=.03).

  The cost-benefit analysis, as shown in Exhibit 1, determines whether Washington citizens receive a positive return on their dollars spent on ART. When ART is delivered by competent courts, it generates $11.66 in benefits (avoided crime costs) for each dollar spent on the program. When not competently delivered, ART costs the taxpayer $3.10. Averaging these results for all youth receiving ART, regardless of court competence, results in a net savings of $6.71 per dollar of costs.

[45] A more detailed discussion of the crime victim cost definitions is contained in Aos et al., *The Comparative Costs and Benefits of Programs to Reduce Crime*.

✓ **Coordination of Services**

The 12-month felony recidivism rate for the control group is 5 percent compared with 2 percent for the WayOut group, a 55 percent reduction. The adjusted rates are similar and produce a 59 percent reduction in 12-month felony recidivism. Both of these differences are statistically significant at the p=.15 probability level.

The cost-benefit analyses find that COS generates $7.89 in savings (avoided crime costs) for each taxpayer dollar spent on the program.

✓ **Multi-Systemic Therapy**

The evaluation of MST, as implemented in Washington State, cannot conclusively indicate whether MST was able to reduce recidivism.

✓ **Overall**

These findings indicate that research-based programs can reduce recidivism. However, without quality assurance, programs may not only fail to reduce recidivism, they may actually increase recidivism. The 2003 Washington State Legislature acted on the preliminary CJAA evaluation results by directing the Institute to develop adherence and outcome standards for juvenile justice research-based programs (RCW 13.40.530), which were published in December 2003.

This report affirms the merit of Legislature's investment in research-based programs for juvenile offenders. The next step is to implement the quality assurance standards so that taxpayer benefits can confidently be obtained for each dollar spent on the CJAA programs.

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Finally, it is the competent work of the juvenile court staff and the program providers that produced these positive findings.

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